DISCUSSION OF THE AMENDMENT

Claim 32 has been amended by incorporating the subject matter of Claim 37 therein, and by adding that --the product is removed from the subject by heating the product by the heating device--, as supported in the specification at page 28, lines 12-17. Changes in punctuation have been made for purposes of consistency. Claim 37 has been cancelled. Finally, each of Claims 38-41 have been amended to depend on Claim 32.

No new matter is believed to have been added by the above amendment. Claims 32-36 and 38-51 are now pending in the application.

REMARKS

As recited in new Claim 32, the present invention is a surface treatment apparatus comprising:

a plasma generation section for generating plasma from a plasma generating gas;

a treatment vessel connected to the plasma generation section and including a susceptor on which a subject to be treated is placed;

a cooling device for cooling the subject placed on the susceptor to a predetermined temperature;

a supply section for adding a reactive gas to an activated plasma generating gas activated by the plasma generation section and caused to flow toward the subject cooled by the cooling device,

wherein an activated reactive gas is generated by adding the reactive gas to the activated plasma generating gas, and the activated reactive gas is reacted with a surface layer of the subject cooled by the cooling device; and

a heating device for heating a product produced by a reaction between the activated reactive gas and the surface layer of the subject,

wherein the product is removed from the subject by heating the product by the heating device.

The rejections of:

Claims 32-36 under 35 U.S.C. § 102(b) as anticipated by U.S. 5,328,558 (Kawamura);

Claims 42-44 under 35 U.S.C. § 103(a) as unpatentable over Kawamura; and

Claims 45-47 under 35 U.S.C. § 103(a) as unpatentable over Kawamura in view of U.S. 5,919,336 (Kikuchi et al),

are respectfully traversed.

As discussed above, all the present claims have the limitations of Claim 37, not subject to the above rejections. Accordingly, it is respectfully requested that they be withdrawn.

The rejection of Claims 37-41 and 48-51 under 35 U.S.C. § 103(a) as unpatentable over Kawamura in view of U.S. 5,616,208 (Lee), is respectfully traversed. Kawamura discloses etching a SiO_2 film on a silicon wafer using an NF_3/H_2 mixture as a feed gas for an etchant, wherein the mixture is made into plasma, and activated species of fluorine, hydrogen and nitrogen are supplied downstream to allow the species to be adsorbed in and on the SiO_2 film (Abstract). The Examiner recognizes that Kawamura does not disclose a supply section for adding a reactive gas, noting that Kawamura discloses the use of argon, but finds that Kawamura's gas supplying section is capable of delivering a reactive gas as well as a non-reactive gas. In addition, the Examiner notes that Kawamura does not disclose a heating device as recited in, *inter alia*, Claim 37, now part of Claim 32. The Examiner thus relies on Lee.

Lee is drawn to cleaning a multi-chamber vacuum processing apparatus using a cleaning gas containing ClF_3. The Examiner relies on Lee's disclosure of, *inter alia*, a cooling means and a heating means, and concludes that it would have been obvious to employ these means of Lee in the apparatus of Kawamura.

However, even if Kawamura and Lee were combined, the result would still not be the presently-claimed invention, which requires that the product be removed from the subject by heating the product by the heating device. The heating device has, as its purpose, heating a product produced by the reaction between the activated reactive gas and the surface layer, for example, a native oxide film, of the subject, so that the product is removed from the subject. The heating means disclosed in Lee has a different intended function than the presently recited heating device.

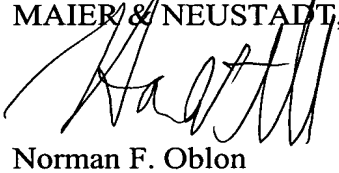
For all the above reasons, it is respectfully requested that the rejection over Kawamura in view of Lee be withdrawn.

Applicants respectfully call the Examiner's attention to the Information Disclosure Statement (IDS) filed April 8, 2003. The Examiner is respectfully requested to initial the Form PTO 1449 submitted therewith, and include a copy thereof with the next Office communication.

All of the presently pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



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IN THE CLAIMS

--32. (Amended) A surface treatment apparatus comprising:

a plasma generation section for generating plasma from a plasma generating gas[,];

a treatment vessel connected to the plasma generation section and including a susceptor on which a subject to be treated is placed;

a cooling device for cooling the subject placed on the susceptor to a predetermined temperature[,]; [and]

a supply section for adding a reactive gas to an activated plasma generating gas activated by the plasma generation section and caused to flow toward the subject cooled by the cooling device,

wherein an activated reactive gas is generated by adding the reactive gas to the activated plasma generating gas, and the activated reactive gas is reacted with a surface layer of the subject cooled by the cooling device; and

a heating device for heating a product produced by a reaction between the activated reactive gas and the surface layer of the subject,

wherein the product is removed from the subject by heating the product by the heating device.

37. (Cancelled)

38. (Amended) The surface treatment apparatus according to claim [37] 32, wherein the heating temperature is not lower than 100°C.

39. (Amended) The surface treatment apparatus according to claim [37] 32, wherein the heating device is heat radiation means provided above the subject to be treated.

40. (Amended) The surface treatment apparatus according to claim [37] 32, wherein the heating device is a heating lamp provided above the subject to be treated.

41. (Amended) The surface treatment apparatus according to claim [37] 32, further comprising a lifting device for lifting the subject to be treated, to move the subject away from the susceptor when heating the product with the heating device.--